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10/815,372	03/31/2004	Wow Wu		8228

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EXAMINER

PAPE, ZACHARY

ART UNIT PAPER NUMBER

2835

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Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 6, and 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bryant et al. (US 6,707,674) in view of Wu (US 6,542,369).

With respect to claims 1, 6 and 11, Bryant et al. teaches a mounting device assembly comprising: a circuit board (26) having an electronic component (12) mounted thereon, a heat sink (32) comprising a base (As illustrated in Fig 4), and a plurality of fins provided on the base (As illustrated in Fig 4); and a mounting device (30) for mounting the heat sink to the circuit board, the mounting device comprising: a body (Comprising 38a,b, 40a,b, 42, and 44) defining an opening (Between 40a, and 40b) for extension of the electronic component therethrough to contact the base (As illustrated in Fig 4), and comprising a plurality of beams (38a, 38b, 40a, 40b, 42, and 44) surrounding the electronic component and being sandwiched between the base and the circuit board (As illustrated in Fig 4); engaging means (64, 50) integrally formed on the body for engaging with the heat sink at outsides of the fins. Bryant et al. is silent as to latching means integrally formed from the body for latching the mounting device to the circuit board. Wu teaches the conventionality of a mounting device with a body (21) comprising a latching means (Comprising 29, 30) integrally formed from the body (As

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illustrated in Fig 3) to attach the mounting device to a circuit board (4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the latching means of Wu with the mounting device of Bryant et al. to provide a fixing device that meets the requirements of fast assembling and disassembling (Wu, Column 1, Lines 34-36).

With respect to claim 12, Bryant et al. further teaches that the mounting device (30) is a substantial rectangular plate (As illustrated in Fig 5).

With respect to claim 13, Wu further teaches two pairs of feet (29, 30) are formed on four corner portions of the mounting device, each pair of the feet are oriented perpendicular to each other and fittingly engaged in the circuit board (As illustrated in Fig 6). With respect to the limitation that there are "four pair of feet", it would have been obvious to one having ordinary skill in the art at the time the invention was made to include an additional two pairs of feet, since it has been held that mere duplication of essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. Adding additional feet would allow the frame to be better secured to the circuit board.

With respect to claim 14, Bryant et al. further teaches that the fasteners (46) are formed on the mounting device and snap a base plate of the heat sink which is in contact with the electronic component (As illustrated in Figs 6-8; see also Column 3, Lines 50-54).

With respect to claim 15, Wu further teaches that the latches (29, 30) are formed on the mounting device (As illustrated in Fig 3) and snap a surface of the circuit board

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opposite to the surface where the electronic component mounted (As illustrated in Fig 6).

With respect to claim 16, Bryant et al. further teaches that the mounting device is provided with an upward plane (Defined by 39) supporting a base of the heat sink, and defines an opening (Between 40a, and 40b) to allow one of said heat sink and said electronic component to extend therethrough to contact the other (As illustrated in Fig 8, see also Column 3, Lines 3-9).

Claims 2-4, 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bryant et al. in view of Wu and further in view of Lin et al. (US 6,396,696).

With respect to claims 2 and 7, Bryant et al. in view of Wu teaches the limitations of claims 1 and 6 above, and Bryant et al. further teaches that the base of the heat sink defines a plurality of cutouts (Notch in 64) in opposite longitudinal sides thereof, the beams comprise a pair of longitudinal beams (44), and the engaging means comprises a plurality of fasteners (64, 50) formed on the longitudinal beams. Bryant et al. fails to teach that the fasteners engage in the cutouts. Lin et al. teaches the conventionality of utilizing an engaging means (62) for engaging with a cutout (26) on the base of a heatsink. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Lin et al. with those of Bryant et al. in view of Wu to firmly secure the heat sink to the electronic device (Lin, Column 1, Lines 57-58).

With respect to claims 3 and 8, Wu further teaches a pair of locking slots (41) on opposite sides of the electronic component and the latching means comprises a pair of latches (29, 30) formed on bottoms of longitudinal beams and engaging in the locking slots (As illustrated in Fig 6).

With respect to claims 4 and 9, Wu further teaches that the circuit board (4) defines a plurality of pairs of locating openings (4) surrounding the electronic component (12), and the body of the mounting device comprises a pair of feet (29, 30) received in the locating openings respectively (As illustrated in Fig 6). With respect to the limitation that the mounting device comprises a plurality of pairs of feet, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add additional feet and openings, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St Regis Paper Co. v. Bemis Co.* 193 USPQ. Adding additional feet and openings would allow the frame to be better secured to the circuit board.

Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bryant et al. in view of Wu and further in view of Lin et al. and further in view of Kosteva et al. (US 5,870,285).

With respect to claims 5 and 10, Bryant et al. in view of Wu and further in view of Lin et al. teaches the limitations of claims 3 and 8 above, but fails to teach that the base of the heat sink defines a pair of holes in opposite lateral side portions thereof, the beams further comprise a pair of lateral beams, a pair of posts is formed on the lateral

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beams, and the posts are fittingly received in the holes. Kosteva et al. teaches the conventionality of a heat sink (16) which defines a pair of holes (17) in opposite lateral side portions thereof and a pair of posts (11,12) formed on lateral beams, and the posts are fittingly received in the holes portions (Column 2, Lines 52-54). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Kosteva et al. with the teachings of Bryant et al, Wu and Lin et al. to hold the heat sink relative to an electronic device (Kosteva, Column 1, Lines 56-57).

Conclusion

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 6,560,111; US 6,952,348; US 6,250,0226; US 20040252461; US 5,808,236 all further teach heat sink mounting devices.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zachary M. Pape whose telephone number is 571-272-2201. The examiner can normally be reached on Mon. - Thur. & every other Fri. (8:00am - 5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn Feild can be reached at 571-272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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ZMP


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PRIMARY EXAMINER